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PROPERLY PLANTED
IRRIGATED ORCHARD

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U.S. Department of Agriculture

C. K. Cole
1949

FOREWORD

Part first of this booklet tells what particular trees are best for orchard planting; gives directions for planting; tells how to prune and care for trees the first few years.

Part second is about my business.

This is meant to be a frank, clean statement; free from technical terms; plain and understandable. It is offered without apology or halo. I expect you to read every word including order form.

There are a lot of reliable nurserymen in this country, I know most of 'em, most of 'em are my personal friends. I will take pleasure in referring you to them if you wish, but I am working in the interest of my own business, which keeps me busy.

All names, addresses and places here mentioned are real, you can find all.

Illustrations are reproductions of photographs taken in this vicinity; I can show you the originals.

I would like a personal acquaintance with all customers; wish all might examine my plant, but that is not possible, and so I write this little booklet.

I will be glad to have you question any statement. I will be glad to answer questions or give advice to the best of my ability.

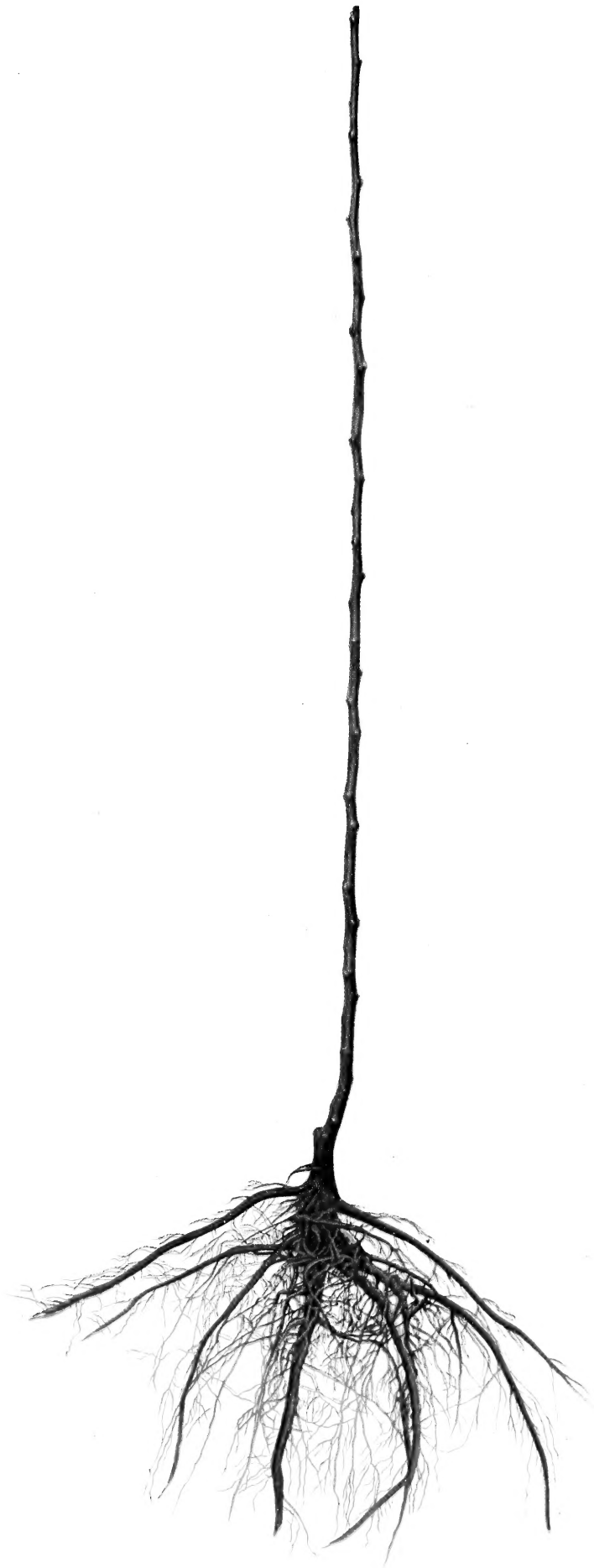
Please regard this booklet as a personal letter.

HERBERT CHASE.

Delta, Colorado.

The Best Tree

The roots are three years old, the top was developed in one season. (See next page for full explanation).





Part First—Your Business



AS TO VARIETY, fruit trees do not reproduce themselves from seed. A tree grown from the seed of a Jonathan Apple, will not bear Jonathans; no man can know in advance what sort of an Apple it will bear, it will probably be a yellow or red Crab. A tree grown from the seed of an Elberta Peach will be a Peach tree, but not an Elberta, the fruit may be large or small, early or late, white or yellow, cling or free. Varieties are exactly reproduced from scions or buds. For these reasons, nurserymen exist. The first thought of all decent nurserymen is to grow trees free from disease and true to name. The seed he uses must be from wild or "natural" fruits, because such seeds are free from inbred diseases, and full of health and vigor.

The finest cider in the world is made from the small, wild Crabs of Normandy, France. I think those Crabs are not used for anything else. Practically, all Apple seedlings are grown from this wild French Crab seed. Wild Crab seed can not be obtained in quantity elsewhere.

Three years are required to grow the tree shown on opposite page, as follows:

First year. A wild Crab Apple seed is planted. It germinates and grows, the little plant is called a seedling.

Second year. In early Spring the seedling is transplanted to the nursery row. During July or August, a bud is cut from a tree of the variety wanted, and inserted beneath the bark of the growing seedling, near the ground. In about ten days the bud grows to, or unites with, the seedling and becomes a part of that plant. This bud does not begin growth while the top of the seedling grows; the lower buds remain dormant; that is Nature's way.

Third year. At the approach of the growing season, very early in the Spring, the entire top of the seedling, (now two years old) from just above the bud that was inserted the summer before, is cut off and the bud that has lain dormant all this time begins growth, it receives the benefit of all plant food stored within the roots the past two years. This accumulated strength, the entire energy of the plant, is given to that bud and it grows vigorously.

Thus, you understand the top above the roots develops in one season. This is why such a tree is extra strong, with wonderful roots.

Under all conditions this is the best tree for planting; it is the ideal tree from which to grow a perfect orchard; it is the tree that will produce the finest fruit and will produce it earlier than a tree with an older, bushy top. This is known as a one year budded tree

A Business Talk to Men



MY TALK is addressed to men who expect to plant trees to bear fruit, to be sold in the great markets, as a business proposition. . . . An established tree takes its food through the roots, in liquid form, from the earth. This liquid food (crude sap) goes through the sapwood up to the leaves where the sun, light, air and the leaves evaporate a large part of the water and "work over" the crude sap "digesting" it. The "digested" food returns to the roots through the bark, building up the tree. It is this "digested" sap returning from the leaves that heals wounds and adds girth.

Many think that the sap "goes up in Spring" and "comes down in Fall". This is an error. Sap is always in the bodies of live trees, but during the season of growth the sap is active, constantly circulating, to nourish the tree and add growth.

A newly planted tree can not at once take food from the earth: first the roots must send out tiny "feeders" to take in the liquid food: the stem must develop leaves to help "digest" that food, and so Nature stores food within the bodies of young trees to care for them during this time. This stored food starts the buds and leaves; the roots send out their "feeders," and the tree begins to gather food and strength.

If you will lay a live, dormant tree on the floor of a slightly warm, light room, and will keep the tree from drying out, the buds will swell and leaves will grow, often bloom will develop. The food Nature stored within its body to help it gather life from Mother Earth, is thus spent; there is no hope; that tree must die.

Never plant trees that are sprouted; sprouting uses strength the tree needs to help it gather food at a critical time. Often sprouted trees will live, but they can not grow as vigorously as dormant trees. Sprouted trees are not merchantable.

There is no secret, no mystery, no difficulty about growing trees, but you must do a little yourself, understand, **do a little**. Nature wants your help, she is entitled to it, it is fun, it is easy, and it will do you good. Just get in tune, use sense and go by the book.

Many trees are planted poorly and through Nature's care some of them live. Nature can not care for all neglected trees and so many die.

John Muir says in "Our National Parks" Page 373, "Any fool can destroy trees."

Many think all leaves and limbs that start along the stem of a newly planted tree should be rubbed off up to 15 or 18 inches above the ground, the idea being to "throw the strength to the upper branches". This is not best for the following reasons; that tree was just planted; it has no strength to "throw" except what Nature stored within its body while it was growing in the nursery; it is struggling for life; it is getting ready to draw food from the earth, it needs the help of the leaves to gather food and to protect its body from sun scald. At the time of planting you cut away (see directions, Page 9) the top to reduce the leaf surface to what the tree could support; if now you rub the leaves off, you weaken the tree, you are not likely to kill it, but if you will let the leaves grow, the upper branches will be stronger, the trunk thicker, the tree will have more roots, all because of the help of the leaves.

In the Spring of 1912, five fruit growers in different parts of this County each planted 10 trees as an experiment to demonstrate this statement. At the time of planting, I

T R E E S F O R I R R I G A T E D S E C T I O N S

measured the thickness of each tree. During the season of growth, five trees from each lot were rubbed down, five were not rubbed. At the end of the growing season, I measured the thickness of all and give the figures below. This is a fair test.

Lot 1, alfalfa soil thoroughly prepared; work done in the best manner.	Lot 3, planted in old orchard ground
Trees rubbed increased..... 12½%	Trees rubbed increased 23 %
Trees not rubbed increased..... 64 %	Trees not rubbed increased 36 %
Lot 2, new ground not well fitted. The only plowing was a strip about 8 feet wide for the tree rows.	Lot 4, planted in well prepared ground.
Trees rubbed increased..... 14½%	Trees rubbed increased..... 45 %
Trees not rubbed increased..... 45½%	Trees not rubbed increased..... 50 %
	Lot 5.
	Trees rubbed increased 1025%
	Trees not rubbed increased 1315%

Prof. L. H. Bailey says in his Pruning Book, Page 14, "The more active and efficient the root, the larger the top." Page 17, "The growth of the roots is therefore largely determined by the amount and vigor of the top, or leaf-bearing portion."

If you rub all leaves off as they appear, the tree will die. If you rub all leaves from any branch, that branch will die.

Watch your trees; if a lower branch grows out of proportion, say 8 inches long, pinch out the tip (see cut No. 6, Page 10), that will check the growth, but gives the tree the benefit of the leaves.

One man said to me, "Oh, but if I rub 'em off, there will be no scars, my young trees will look smoother." He spoke the truth. Another man said, "But think of the work and expense of cutting off those little shoots next Spring. I can rub 'em off cheaper." He also spoke the magic words of truth. But neither of these men planted trees to "look smoother" the first year, or to "rub 'em off cheaper." If you rub 'em or cut 'em, there will be no scars at the end of the next growing season.

I assume you plant trees to live and grow; to bear fruit to be sold out in the big World, where good fruit is wanted, where the supply is never equal to the demand, and where the best always sells for high prices.

Selling fruit trees 3 and 4 years old originated "down East;" then all trees were sold through agents; the agent wanted "talking points" and so he talked about "large trees of bearing age" and gave the impression that old trees would bear early; the old trees looked more like a bargain; they filled the eye. The buyer not knowing about such things, naturally thought them the best, and so it is to this day. Many men wonderfully intelligent in their own business, think old trees are better; think an old tree will live easier and bear sooner, while exactly the reverse is the case.

In New England today, the men who pay attention to the business of orcharding, do not think as the men of one hundred years ago thought. Last Spring I sent Mr. J. H. Hale, of Connecticut (one of the greatest fruit growers in the world, and an authority on horticultural subjects) a sample of the trees we plant here, and asked what the feeling in New England was today, and what he thought of such trees compared with older ones. He wrote me, these one year budded trees were "best always."

Trees 20 to 30 years old may be transplanted to live, but that is not a profitable business, and only men who wish to gratify a whim and who are willing to pay richly do such things.

I know of men on Long Island, N. Y., who have paid Isaac Hicks & Son, Westbury, N. Y., \$1,000 each for moving large, old trees; they wanted that particular tree, and were willing to pay the price. Hicks could transplant an apple tree 30 years old, and if Hicks

did the work, the tree would live, because Hicks had the equipment, the knowledge, the earnestness, and he does his work the best he knows. Such trees are taken up in mid-winter with a ball of earth frozen about the roots. The tree with the ball of earth often weighs several tons; the cost is \$1,000 to \$1,500 each for moving such trees. Apples from such trees would be small and scrubby. Thus, old trees can be transplanted and will grow, but if you expect to plant for profit; if your fruit is to find a market on merit, if you like to eat a good apple of your own growing and if you would like to have some fruit to sell reasonably soon, plant young trees. Trees 2 or 3 years old are better than trees 20 to 30 years old, but a first class one year old budded tree is better than any other.

I am frequently asked if it is advisable to use old trees for replanting in places where trees planted one or two years before failed to grow. Under all conditions my answer is, plant the best one year budded tree, there is no exception. If the older tree is best for replanting, it would have been best for the original planting.

The fact that trees are 2, 3 or 4 years old is against them.

In the spring of 1910, a friend of mine made a large planting of Apple trees, which was almost a failure; he thought the failure was partially due to fine particles of gravel blowing against the trees. He wished to replant, and thought he should use trees with tops 2, 3 or 4 years old, being under the impression the "bark of the older trees would be tougher." He asked my advice. I did not believe in the proposition, but wished to know what an authority would say and so I wrote Prof. John Craig, head of the Department of Horticulture, Cornell University, Ithaca, N. Y., asking his advice. Prof. Craig's reply, dated May 25, 1911. "Tell your friend that he will only invite trouble by planting the older trees. Stick to the one year olds and protect them by using building paper wrapped around the trunks."

Consult any authority on this question. All will tell you one year old budded trees are best. Ask advice of any of the Agricultural Experiment Stations, whose addresses follow:

California	Berkeley	New Mexico.....	Agricultural College Station
Colorado	Fort Collins	Oregon	Corvallis
Idaho	Moscow	Utah	Logan
Montana	Bozeman	Washington	Pullman

or write the Department of Agriculture, Bureau of Plant Industry, Washington, D. C., and ask for Farmer's Bulletin No. 482. All this is free for the asking; the advice is from well-known men of authority; men who are dependable; go by what they say, profit by the benefit of their knowledge, then thank God for the privilege of living in such a country.



The Bitter with the Sweet

About noon, Thursday, June 6, 1912, there stood in front of the postoffice, a team of fine Norman horses, Weber wagon, new harness; the whole outfit good.

The wagon box was about half full with lumber, on top of the lumber in front, was 300 to 400 pounds of rock salt; next to the salt several bundles of my trees with roots exposed to sun and heat. The mercury in the sun registered above 90.

I asked the driver who owned the trees, and what he was going to do with them. He did not know the owner, but said he was to haul them to Coalby. I do not know who bought those trees, nor when they were taken from my packing house. They may have been taken six weeks before; certainly it was several weeks, because my packing house was closed the latter part of May.

Think with me a moment.

A team and outfit to be proud of; everything the best. My trees paid for in full several weeks ago; they were abused and probably killed before being planted.

I hope that man has money enough left to keep him in comfort, because unless it is so, he surely will have to send back to the folks. Trees must be treated with proper respect. It pays to use common sense in most business affairs undertaken in the Irrigated Sections.

Planting and Pruning Directions

I wish to acknowledge help from the following well-known fruit growers in preparing these directions.

Mr. J. J. Bridges.....Palisade, Colorado.
Mr. A. L. Roberts.....Paonia, Colorado.
Mr. J. D. Hawkins.....Paonia, Colorado.
Dr. A. E. MillerDelta, Colorado.
Mr. C. T. Rule.....Paonia, Colorado.
Prof. G. P. Weldon, Berkeley, California, (formerly Fort Collins, Colorado.)

Prof. Wendell Paddock, Columbus, Ohio, (formerly Fort Collins, Colorado.)

Also Mr. J. H. Baird, Superintendent of the Hale orchard, Fort Valley, Ga., probably the largest and most successful peach orchard in the world.

Plant as early as possible in the Spring.

Do not plant when there is frost in the ground or in the air. If a hard freeze comes after the tree has been planted, no harm is done, but that tree, if well planted, will grow off earlier, faster, and make a better showing than if it had been planted later in the season.

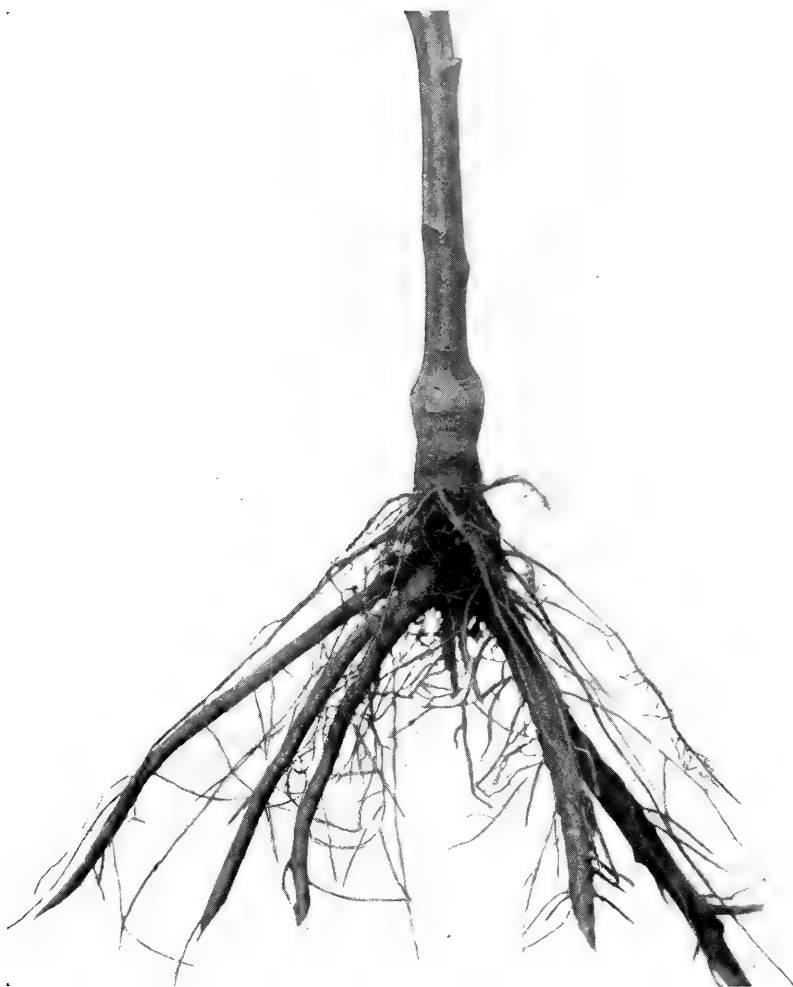
"Trees planted in Fall (in arid regions), do not become well established, and in the

dry winters the roots are unable to supply moisture as rapidly as it is being transpired from the top. As a consequence the tree often dries out to the extent that it lacks the vitality to make a good start in the Spring."—*Fruit Growing in Arid Regions*, Page 48.

At time of planting and two or three years afterwards, trees are pruned to give them the proper shape for bearing regular and heavy crops well; to enable spraying to be done effectively, etc., etc. When the trees reach bearing age, they are pruned for the purpose of enabling them to produce fruit of superior color, size and quality.



No. 2. A close view of the roots of the tree as it comes from the nursery.



No. 3. Roots properly thinned and pruned for planting; they have been shortened to 8 to 10 inches; many of the fine fibrous rootlets have been cut away; all strong roots have been cut with a slant on the under side so that the cut surfaces will lie down.

"The work of pruning should start at the time the tree is planted in the orchard. This is the critical time in the life of the tree and neglect of pruning at that time influences the tree during its remaining years."—*E. H. Favor, in the Fruit Grower's Guide Book, Page 181.*

"With the young orchard well grown, (trees properly pruned at time of planting properly pruned after the first and second years growth) the pruner has probably solved the most difficult problem in pruning of the apple tree."—*Fruit Growing in Arid Regions, Page 117.*

"The hole should be large enough to let the tree stand two or three inches deeper than it was in the nursery. The tree in position, fine top-soil is pushed back in the hole

and worked in about the roots. With the roots well covered with fine soil and the top-soil slightly tramped, the water is turned into the furrow. After a thorough watering, fresh soil is thrown about the tree, and the furrow is left open for a second watering ten days or two weeks later."—*Fruit Growing in Arid Regions, Page 52.*

Dig the hole wider and deeper than the tree requires. Root hairs or feeders grow from the ends of the large roots; these reach out during the growing season, forming a new set of feeding roots. They should find only mellow, rich soil in all directions.

If the tree just fits the hole, its roots will meet hard walls, which the delicate root hairs can not penetrate or feed in. If the soil is mellow, it is in condition to release plant food rapidly, the newly planted tree can begin to take nourishment promptly and will grow rapidly.

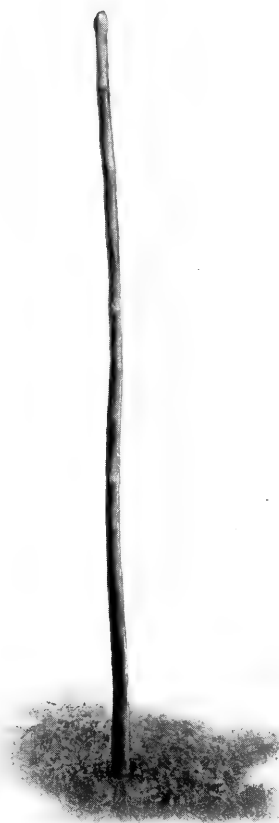
Apple

Prune root and top before planting.

It is impossible to plant well with all the roots and all the tops left on the tree, as it comes from the nursery.

T R E E S F O R I R R I G A T E D S E C T I O N S

The fine rootlets known as root hairs are feeders. They slough off and new feeders grow from near the ends of the larger roots. Therefore, cut most of the fine roots away. If the long roots are not properly pruned, they will be cramped, will mold and rot off. Under these conditions, the tree must heal and recover; "must get over it" before it can attend to business and grow. Shorten all to 8 or 10 inches; use a sharp knife and cut with a slant on the under side as shown in Picture No. 3, so that the cut surfaces will lie down. The cuts will heal quickly; will begin callousing at once and feeding roots will be sent out promptly. There will be no decay, no mold, no sickness, everything ready for business. If roots are broken, ragged or bruised, cut them off; if they remain they will mold or rot off, which weakens the tree.



No. 4. Properly planted and pruned back to 32 inches.



No. 5. Four weeks after planting. Leaves developed from the ground to the top; none are rubbed off.

If part of the top is not cut away, leaves will start out over the entire top; roots are not yet established to feed those leaves. The tree will struggle for life and will probably starve; if it does pull through, it makes only a weak growth.

As soon as planted, cut the top off to desired height. Do not wait. If the top is left, it exhausts the moisture and strength from the body and roots of the tree. If you have not decided on the height, make it 32 inches. (See cut No. 4.)

Free Pruning Tools. For description, refer to pages 18 and 19. With each \$20.00 order for nursery stock, remittance with order, I will send free, a long handled pruner, a pair of pruning shears or a pruning saw.

Freight and Express Prepaid. I prepay freight or express on nursery stock orders of \$15.00 or more.

Best Time for Pruning

The grower who has a small orchard should delay the pruning to as near the opening of the growing season as possible, but if this cannot be arranged, prune at your convenience during the winter.

For full information, read the chapter, "Pruning Mature Trees" in "Fruit Growing in Arid Regions." There you will find authority not influenced by other interests. As you become acquainted with your trees and their habits, and learn more about your own business, you will consult that book often. Every time you re-read it, you will find new help because you are learning all the time.

End of first season's growth. See cuts No. 8 and No. 9.

End of second season's growth. See cuts No. 10 and No. 11.

Third Year. Select from two to three limbs per branch of the frame; remove the others. Cut the selected ones back to about 14 inches. The top should be carefully balanced; avoid bad crotches and limbs that cross. Sometimes it is necessary to remove one or more of the framework branches, which is allowable.

Fourth and Fifth years. Select from one to three limbs per branch that were left the preceding year. Remove crossing limbs. Cut



No. 6. Ten weeks after planting. Every leaf and branch was allowed to grow. Two lower branches are growing a little strong; the workman is pinching off the tip from one branch; this stops growth there, but gives the tree the benefit of the leaves. The top branches are much stronger than the lower branches; this is Nature's way.

the selected limbs back to about 14 inches. From now on, the pruning should be of a thinning and topping nature.

Pruning a Bearing Tree. There is no cut-and-dried, iron-bound pattern. You will soon learn the habits of your trees; varieties of trees, like families of folks, have distinct habits. Some folks use poor whiskey, others do not; some pay their debts; some fight at the drop of a hat; and now and then, to prove the rule, there are exceptions.

Rome Beauty grows upright; prune to outside buds to help overcome that habit.



No. 7. Another tree (growing in an adjoining orchard). The lower leaves were rubbed off. It is the same variety as No. 6. Photographs of No. 6 and No. 7 were taken the same day. No. 6 was planted three weeks earlier than No. 7. Note the stronger growth of No. 6, which shows the advantage of early planting. At the end of the growing season No. 6 will be stronger in proportion than No. 7, because it will have had the benefit of the leaves.



First Year. End of growing Season

No. 8. Twenty-six weeks after planting, (end of first growing season). Twelve branches developed, measuring 261 inches; no limbs were removed; the tree had the benefit of the leaves, which helped to develop roots. Thus, the tree received all the nourishment Nature could provide. It grew vigorously making a foundation for the very best orchard tree.

Jonathan grows spreading; prune to inside buds to help overcome that habit.

Get acquainted with your trees, the trees and yourself will profit thereby.

An old Apple tree in full bearing should be carefully pruned, every year removing nearly as much wood as is produced the preceding year, with care to keep the tops open, balanced, and free from crossing or rubbing limbs. Always cut back to the branch. Never leave a long stub unless water sprouts are desired.

Do not allow your trees to grow so that branches 3 to 4 inches in diameter must be cut out, because then large wounds have

to heal or will be exposed. Often such wounds will not heal.

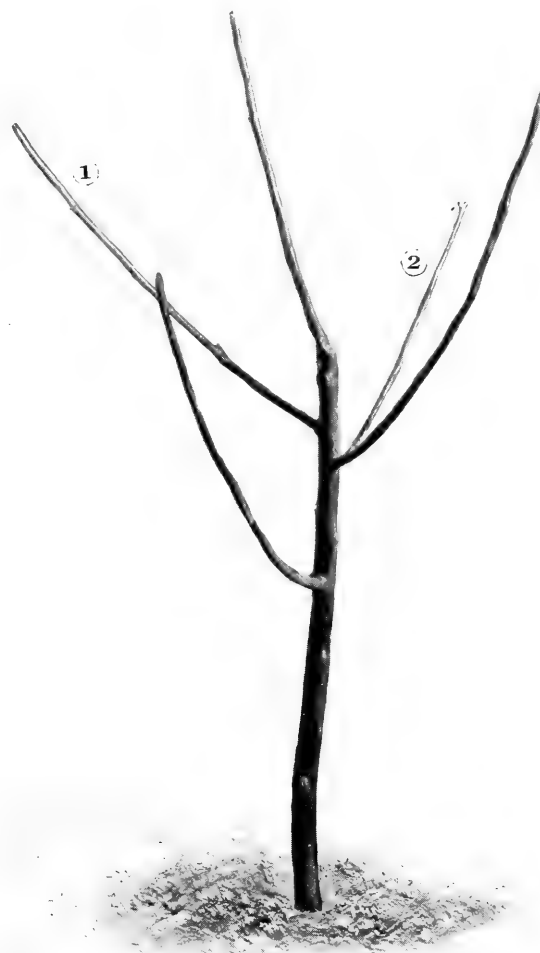
If the tree was properly pruned when young, you would have no difficulty in keeping the matured tree in proper shape.

Distances

There is no fixed rule. Every man has his own ideas and must decide for himself.

Upright growers like Rome Beauty may be planted closer than spreading growers, like Jonathan.

Do not plant too close. 25x25 feet is close enough; many of the best growers in this section plant 25x30 feet, i. e., rows running north and south 30 feet apart, trees 25



The above Tree after being Pruned

No. 9. After being pruned, ready for the second season's growth. For illustration, five limbs each 14 inches long were left, but most orchardists would remove limbs No. 1 and No. 2, leaving only three scaffold limbs.



Second Year. End of Growing Season

No. 10. End of the second growing season, before pruning. Four scaffold limbs were left the year before.

Number of Trees per Acre at Different Distances

25x25 feet	70 trees to acre
25x30 feet	58 trees to acre
30x30 feet	50 trees to acre
32x32 feet	42 trees to acre
32x32 feet, with fillers (as per diagram)	84 trees to acre.



Second Year after being Pruned

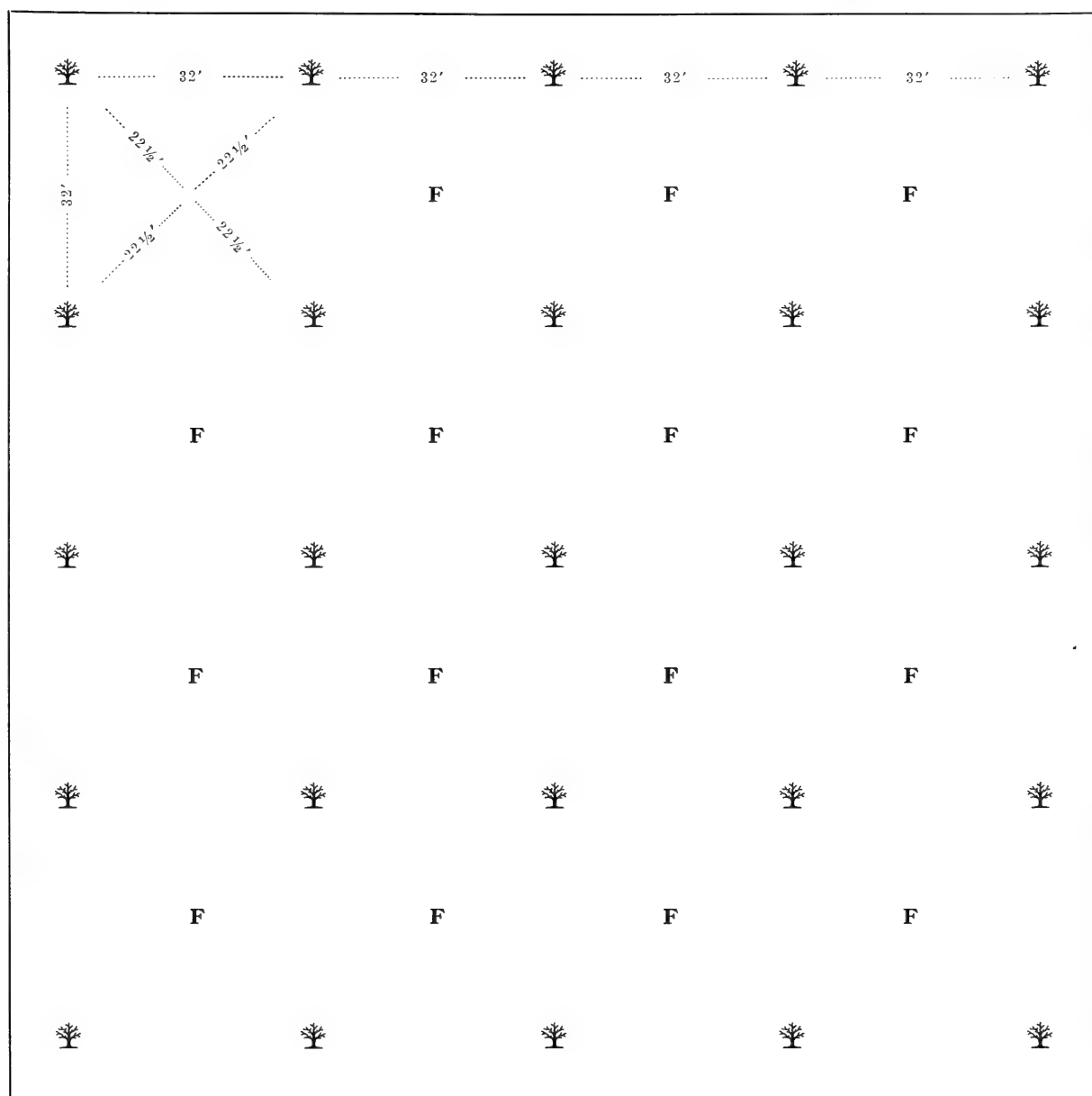
No. 11. After being pruned, ready for the third season. Camera not moved after taking picture No. 10. One scaffold limb was cut away because that will make a tree with a better balanced head and stronger frame.

feet apart in the row. This arrangement takes advantage of the sunlight, which gives the fruit intense color.

Fillers. Do not use Peach trees as fillers in an Apple orchard, because Peaches require different treatment as to irrigation and spraying. Peach trees should not be irrigated after the fruit is picked, unless very late in the season just before freezing up.

"Apple trees may be watered more freely than Peaches, and Pear trees will stand more water than Apple trees. The second season is the critical time for irrigating in the growth of the young orchard, and unless sparingly irrigated and properly matured, it may be seriously injured in severe winter."—*Fruit Growing in Arid Regions*, Page 211.

If fillers are to be used in an Apple orchard, select a variety of Apple that bears early and grows upright instead of spreading. Rome Beauty and Wealthy make good fillers. A good plan for such a planting is to plant the permanent trees of a spreading variety, as Jonathan, Gano, etc., 32 feet apart each way, and the filler an upright grower, in the diamond. Refer to diagram on following page. This shows permanent trees 32 feet apart and fillers 22½ feet from the nearest tree. After 12 or 14 years, the spreading trees will require all the room, and the fillers have borne many profitable crops and can be cut out.



APRICOT

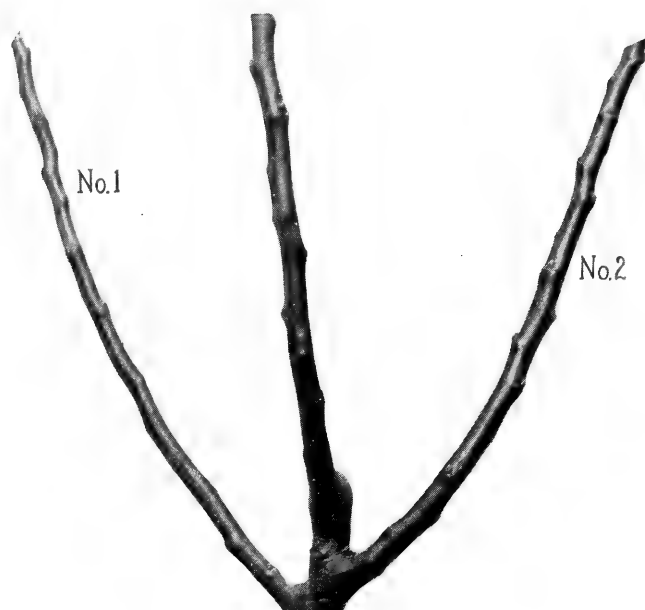
Follow directions for Peach.

CHERRY

There are two distinct types or classes, Heart or Bigarreau and Duke or Morello.

The Hearts, or Bigarreaus (See cut No. 14), are large growing trees with large leaves and large fruits. These are often called "Ox Heart" and "Sweet" Cherries. The young nursery trees grow straight and strong without branches. At time of planting, the root should be pruned the same as Apple. The top should be cut off 32 inches above the ground.

Dukes, or Morellos (See cut No. 15), are smaller growing trees with smaller leaves and smaller fruits. These are frequently called "Sour " Cherries. The young nursery trees branch as shown by illustration. At time of planting, prune the roots the same as Apple



No. 12. Showing what is meant by pruning to "inside" and "outside" buds. Near end of branch No. 1 is an inside bud. Near end of branch No. 2 is an outside bud.

PEACH

A tree 3 to 4 feet tall which will have a few side limbs and some buds along the trunk is best. Peach trees 4 to 6 feet tall are not best because their branches are too high for scaffold limbs and there are no buds on the trunk where scaffold limbs are wanted.

Roots. Prune as for Apple.

Top. Cut off 20 inches above the ground; there is no iron-clad rule; some prefer 18 inches.

If side branches are left, cut them off smooth, close to the main stem, leaving a straight whip. The tree will develop all the side branches you want, and some to spare.

Pruning to go into the second year. Keep in mind you want trees with low open heads. Select three or four scaffold limbs that will be most evenly distributed around the tree. Cut these off about 12 inches from the main stem. The lower scaffold limb should be five to eight inches above the ground. The upper one near the top was cut off at the time of planting.

Number of Trees per Acre at Different Distances.

18x18 feet	135 trees to acre
18x20 feet	121 trees to acre
20x20 feet	110 trees to acre
20x20 seems to be the best distance.	

PEAR

Follow directions for Apple, but always prune to outside buds; the trees are upright growers, and the heads should be as open as possible. Distances, 20 to 25 feet apart, square method.

and cut off about one-half the length of the branches, as indicated by illustration, always leaving the center stem, or leader, a little longer than the others.

Number of Trees per Acre at Different Distances.

Sour Sorts	Trees per Acre
18x18 feet	135
18x20 feet	121
20x20 feet	110
Sweet Sorts	
25x25 feet	70
25x30 feet	58

Pruning Cherry. "The man who objects to pruning, vowing homage to nature, should grow cherries, for there is no fruit-tree of which it may be said that nature is a more efficient pruner."—*Fruit Growing in Arid Regions*, p. 125.

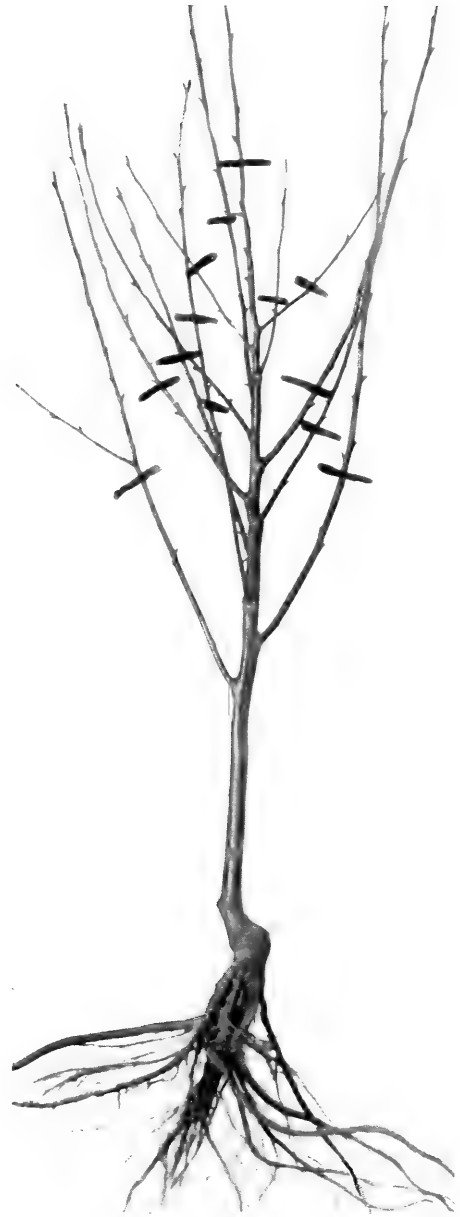


No. 13. Peach tree properly planted. Cut back to 20-inches.



14

Heart or Bigarreau Cherry.



15

Duke or Morello Cherry.

PLUM

Follow directions for Peach, except head the trees a little higher, say 24 to 30 inches.

CROSS FERTILIZATION

It is advisable to plant two sorts in the same orchard, say four rows of one variety then four rows of another. It is a known fact that the Western Slope fruit which has taken the blue ribbon during the last three years, was produced in orchards fertilized with the pollen from other varieties.

From Bulletin No. 181, issued by the Horticultural Division of Cornell University, Ithaca, N. Y.:

"Much of the unsatisfactory fruiting of orchards all over the country is due to self-sterility. A tree is self-sterile if it can not set fruit unless planted near other varieties."

"The main cause of self-sterility is the inability of the pollen of a variety to fertilize the pistils of that variety."

"An indication of self-sterility is the continued dropping of young fruit from isolated trees or solid blocks of one variety."

"Self-sterility is not a constant character with any variety. The same variety may be self-sterile in one place, nearly self-fertile in another."

"The loss of fruit from self-sterility usually may be prevented by planting other varieties among the self-sterile trees."

"The pollen of some varieties will give larger fruit than that of others when it falls on or is applied to the pistils of either self-sterile or self-fertile varieties."

"Cross-pollination probably gives better results than self-pollination with nearly all varieties."

"It is advisable and practicable to plant all varieties of orchard fruits, be they self-sterile or self-fertile, with reference to cross-pollination."

SPRAYING

The fruit grower who does not spray when necessary does not grow the best fruit or get the best returns; does not make the profit he is entitled to. There is no argument on this question.

The calyx cup of the Apple remains open about 6 to 8 days (if weather is warm, it may close in 6.) This is the time to make first spray for codling moth (worms). One spray may be sufficient to control them. If, however, because of previous infestation or other things, codling moth is very abundant during a season, three or more sprays may be necessary. The first is always the most important.

I do not know enough about this subject to give directions. "Fruit Growing in Arid Regions" contains a chapter, "Orchard Pests and Their Control," which is boiled down, accurate directions for spraying all fruit trees in arid regions. It will pay you to get that book and go by it.

Also write U. S. Department of Agriculture, Washington, D. C., and ask for Farmers Bulletin No. 492. It is mailed free. This Bulletin tells about the more important insect and fungus enemies of the fruit and foliage of the Apple, and how to control them.

Conditions of the Apple Bloom in Relation to the Spraying for Codling Moth (Worms)



No. 1. The bloom falling.
No. 2. Five days after the bloom has fallen. The calyx lobes are spread and in the right condition for spraying.
No. 3. Twelve days after the bloom has fallen. Young apples with the calyx lobes closed and too late for satisfactory spraying.

Orchard Troubles to Avoid



16

No. 16. Do not plant this kind of a tree. The branches are too high, and are not properly spaced for scaffold limbs. At bearing age the crotches are likely to break under a load of fruit. (See illustrations No. 18 and No. 19). There are no live buds on the trunk of this tree, because the trunk is more than one year old and the buds were rubbed off in the nursery. You want live buds along the trunk of the trees you plant.



17

No. 17. Photographed ten weeks after planting. This tree was not cut back at the time of planting, the whole top was left; all buds started, but, because the tree was not properly pruned, it was not nourished, and did not make growth. The tree is slowly starving, the tip is already dead, and the entire tree will die before the summer is over, while if the top and roots had been pruned, it might have had a long, useful life, making folks happier.



No. 18. This tree developed from a tree similar to No. 16. Here are five scaffold limbs, but they are so arranged that the tree has already split open. The probability is it will last only a season or two more, while it should be right in its prime, and if it had been properly pruned when young, there would be an even chance for 40 years more of profitable life.



No. 19. This developed from a tree similar to No. 16. Here are eight scaffold limbs so near each other that they form dangerous crotches. The weight of last year's crop started to split the tree. The probability is, another crop will finish it.

Pruning Tools and Accessories

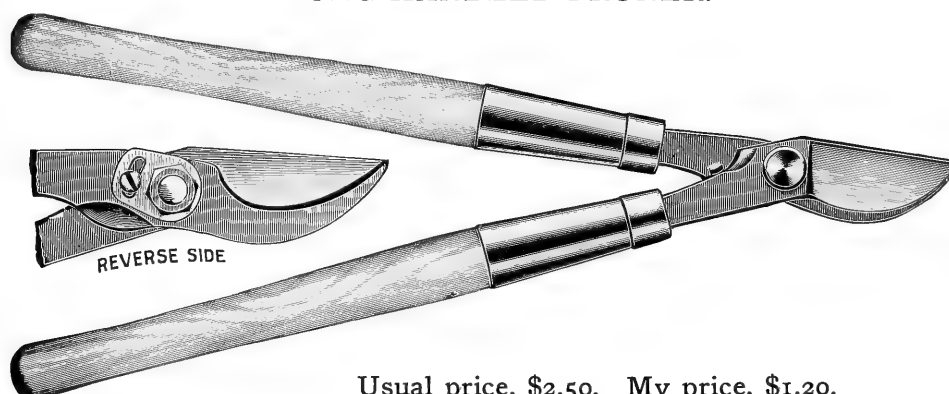
"Every pruner should be furnished with good tools. This does not mean that he must have every tool in the market, for many of them are useless. The ax and the dull saw have no place in a catalogue of pruning tools. The pruner needs a good sharp saw, a pair of light shears, a pair of heavy shears."—Fruit Growing in Arid Regions, Page 115.



ANY of my correspondents are unable to find the best pruning tools and reliable thermometers and will appreciate being able to get these. To me, these seem entirely reliable. I offer them without profit, as an advertisement and to help spread the gospel of reliability in business. The prices for which I sell these articles is less than cost to many local merchants, please do not think that I offer them in "competition," I do not. I do it for your good and mine. These tools will be sent only when remittance in full accompanies the order.

These articles sent by mail. Refer to chart on page 36 for cost of postage.

LONG HANDLED PRUNER.



Usual price, \$2.50. My price, \$1.20.

Two-hand heavy pruners. Cronk's make. The Cronk people make six styles and grades of these. This is their highest priced, their best; forged from high grade tool steel; wrought iron ferrules, which were especially riveted so the handles can not come out; has Cronk patent lock nut. The shears can not work loose. I had this tool thoroughly tested last season and I offer it as a high grade, satisfactory, first class article.

FRENCH SHEARS

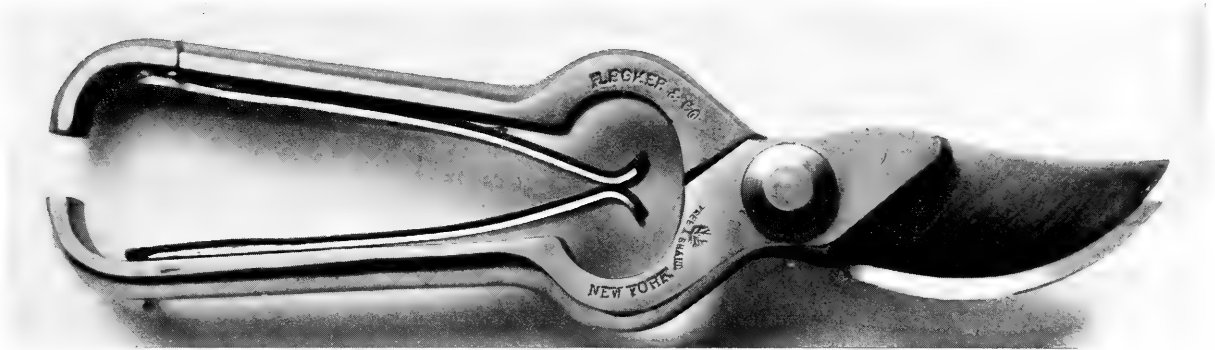


Usual Price, \$2.50; My Price, \$1.25.

T R E E S F O R I R R I G A T E D S E C T I O N S

French. 9 inch, heavy, but will not stand as heavy work as the Boker. They make a clean, smooth cut approaching a knife cut. The spring is quick and positive. This is the most satisfactory shear for nursery work. I have used it for 20 years, but in the nursery we do not have heavy pruning. This is the most satisfactory shear for work in young orchards, say 5 years and younger, but for heavier work you will find the Boker best. The only trouble with this shear is, once in a while a spring breaks and the shear is useless until you get a new spring. I furnish the extra springs at 25c each, by mail. They are easily put in place.

BOKER TREE BRAND SHEARS

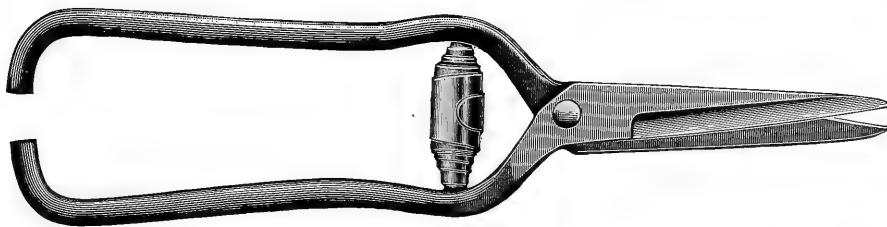
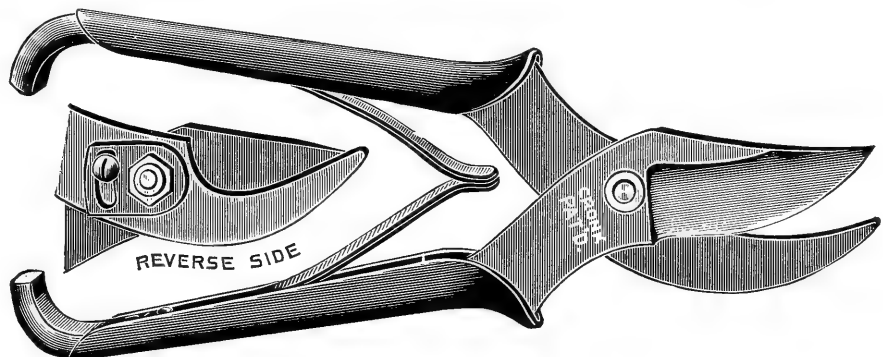


Usual Price, \$3.00. My price, \$1.85.

Extra heavy, 9 inch; a powerful high-grade shear. Will stand heavy work. The favorite shear with experienced pruners for all classes of work.

Cronk Shears. 8 inch, has lock nut. Usually sold for \$1, and a good shear of its class.

Usual Price, \$1; My Price, 60c.



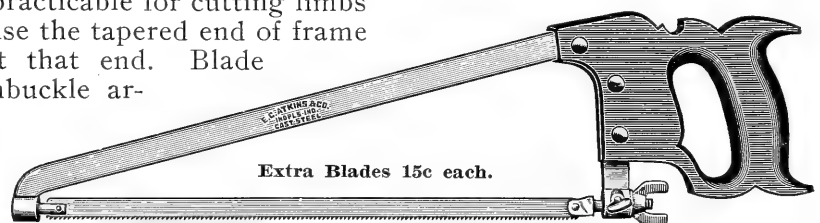
Grape or thinning shear, $6\frac{3}{4}$ inch; Cronk's make. A standard article.

Usual Price, 40 to 50c; My Price, 25c.

PRUNING SAWS

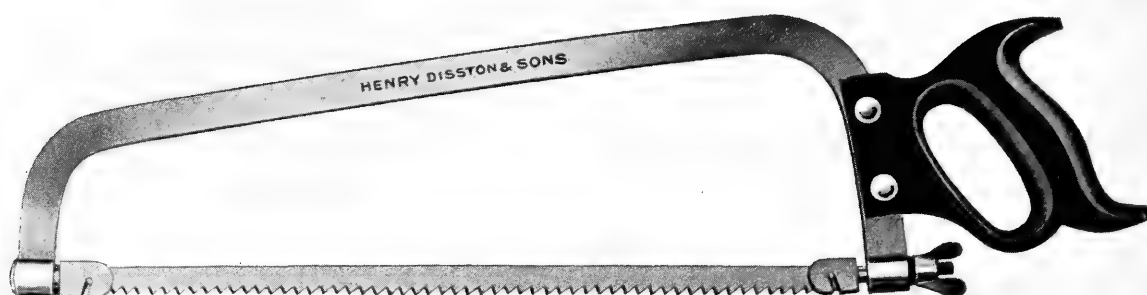
Atkins tapered frame. Length of frame 14 inches. Frame is tapered to reach out-of-the-way places, but is not practicable for cutting limbs thicker than $1\frac{3}{4}$ inches, because the tapered end of frame interferes with the blade at that end. Blade fastened to frame by a turnbuckle arrangement and is held rigid at any angle.

Usual Price, \$1.50;
My Price, \$1.



Extra Blades 15c each.

DISSTON'S PRUNING SAW



Usual price, \$1.50 to \$1.75; My price, \$1.15. Extra blades, 15c each.

Disston's. Length of blade 14 inches; blade fastened to frame with smooth swivel; and adjusts itself to any angle while in use. The shape of the frame allows the use of the blade the entire length when cutting a large limb. Undoubtedly, this is the most valuable pruning saw in use.

THERMOMETERS

You can easily buy inferior thermometers, but often it is difficult to obtain one that is accurate. These are the celebrated Taylor Tycos, standard grade, with magnifying mercury tubes. You will find them reliable. 8 inch. Usual price, \$1.00; My Price, 65 cts.

GRAFTING WAX

There are many kinds of grafting wax, but the one which is most serviceable for applying with the hands in the open air is made by melting together one part (by weight) tallow, two parts beeswax, four parts rosin. Pour a convenient portion of the melted liquid into a pail of cold water, when it immediately hardens. Take up with the hands and pull like candy. When it becomes light yellow, it is finished, and can be made into balls and put away for future use. It will keep indefinitely. When used the warmth of the hands will cause it to soften. When handling it, the hands should be greased with tallow to prevent it from sticking. Or I will supply it. My price, per lb., 20 cts.

A grafting wax to be applied with a brush and much used for kerf grafting: Raw linseed oil, 1 pound; beeswax, 2 pounds; rosin, 6 pounds. Boil all together.

A VALUABLE BOOK

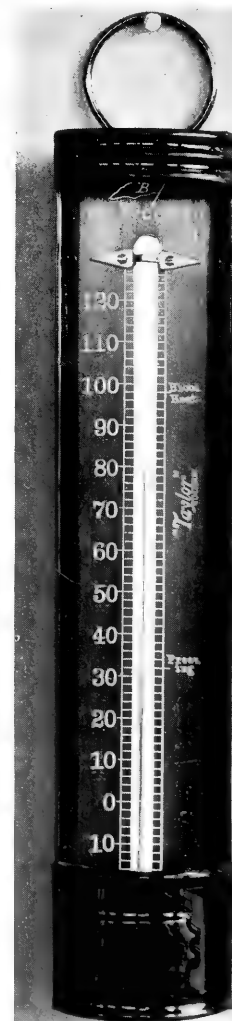
FRUIT GROWING IN ARID REGIONS. By Paddock and Whipple

In connection with the Agricultural Experiment Station, at Fort Collins, Colorado, the authors spent several years in work and experiment in the orchards of the western slope; the object being to help the intelligent fruit-grower. The book tells about: Pruning, spraying, altitude, irrigation, top-grafting, orchard soils, preparing land, orchard pests and their control, influence of pruning on bearing habit, and interplanting of varieties on account of cross-fertilization.

This book will be found a great help; it ought to be in the hands of every fruit-grower in the irrigated sections.

By special arrangement with the publishers (The MacMillan Company), I can mail you this book for \$1.10, although the publisher's price is \$1.66.

For Parcel Post rates on Pruning Tools and Accessories, see page 36.



Part Second—My Business



MY BUSINESS is growing the leading sorts of standard fruit trees. These trees are sold to men who really wish to buy; who want the best; who want to know they are dealing with a reliable nurseryman. My trees are not sold through tree peddlers and tree agents, but are sold by me direct.

In Oxford County, Maine, in the year 1856, Ethan Allen Chase began selling trees for a Rochester, N. Y., nursery. Their methods were not to his liking and he quit. He had a love for fruit growing; he believed a nursery business founded on plain, straight-forward quare dealing would win.

Soon he started business on his own account; it was a success. A few years later, with his brothers, he founded the New England Nurseries, (Chase Brothers, Proprietors), Rochester, N. Y. That business continues to this day and is one of the greatest nurseries in the world; is well-known for reliability.

Twenty-three years ago, E. A. Chase moved to Riverside, California; he was 60 years young. In California, he engaged in the citrus nursery business. Later he founded one of the greatest orange and lemon groves in the world. His fruit is packed and graded as he wishes; his boxes are branded to show exactly what they contain; that fruit is sold in New York, Boston and Chicago; his brand sells for far more money than the average, because it is known to be well packed and of the best quality.

Ask any prominent man connected with the citrus industry of this country, about E. A. Chase; you will learn he is regarded as one of the founders of the dependable citrus industry of California; no man living in Southern California is esteemed more than he; his earnestness and his square dealing is the reason.

In 1889, E. A. Chase and his brothers established my brothers and myself in the nursery business. Our business was growing fruit trees to be sold at wholesale to other nurserymen; our product went into every state in this Union and found a market because it was known to be reliable. I am well known to the nursery trade throughout the U. S., and take pleasure in referring you to any high-class, reliable nurseryman in this country.

I say these things wishing you to understand I am in position to know my business. My coming to Colorado was sort of a "change" and "rest" proposition.

Before coming here to live, I thought Fruit Growing in the irrigated sections was handled with more thought, care and intelligence than in the older Eastern States. Since living here and becoming personally acquainted with conditions, I have learned the first consideration in buying nursery stock here is dependability; that trees put out in the best condition, so that they will give the planter results, is what counts for increased business.

I have built here one of the most efficient packing houses in the U. S. (illustrated and described on Pages 22, 33, 24.) This house was built to give my stock every protection it is entitled to.

PACKING HOUSE

Not a cold storage warehouse, no ice, no artificial refrigeration, no fire used. Built with a series of dead-air spaces in walls and roof, which keep out heat and cold, with the addition of air-ducts beneath the floors to admit cold air (see Page 23). and vent doors



PACKING-HOUSE.

1. Windows (cannot be opened), two solid sashes with airspace between. 2. Vent doors (bound with wool felt and canvas) for escape of hot air. 3. Ends of cold air ducts. 4. Office.

in roof to allow warm air to escape. Refrigerator doors used, built from plans furnished by the Barker & Haskell Car Company, who also furnished the lever handles to force the doors air-tight.

We fight heat without ice, cold without fire. It is well known that cold air is heavier than warm. Accordingly, if the temperature in the house is higher than wanted, the cold air ducts and vents are opened; when the air is changed and the temperature is right, ducts and vents are closed; the temperature will remain practically stationary for several days. Thus the trees (packed in spagnum moss) are held in a uniform, natural temperature, not high enough to start growth, not dry.

This house was built for the inspection and care of trees during the planting season. Trees are not kept in this house except during the planting season.

Last Spring as the season was drawing to a close, there were many mornings, when just about sunrise, the temperature inside the packing house was two degrees colder than it was outdoors, showing proper ventilation, and that the house had been able to take advantage of natural conditions.

Every Spring you see bundles and boxes of trees lying about depot platforms, or being inspected in the sun and wind. MY HOUSE WAS BUILT to avoid such inspection and to give trees protection until they are wanted by the planter. They are kept cool, moist and dormant. Their vitality is not impaired.

During March and April, 1911, temperatures outdoors and in the house were as follows (Taylor's and Hicks' self-registering thermometers used): "Outside" temperatures taken on north wall of packinghouse, away from the sun.

T R E E S F O R I R R I G A T E D S E C T I O N S



Interior of packing-house, looking into one of the fumigators; showing the cold-air ducts (concrete) built beneath the floor level; and one of the plugs (against the wall) for closing the ducts.

Outside.		Inside.	
	deg.		deg.
March, Average highest	60.8	Average highest	44.6
Average lowest	29.4	Average lowest	33.8
Variation.....	31.4	Variation.....	10.8
April, Average highest	68.1	Average highest	47.7
Average lowest	32.7	Average lowest	36.2
Variation.....	35.4	Variation.....	11.5

Trees cared for in this way, are full of life and ready to start growth.

Trees should be planted early; in this section never later than the last of April, but to test the value of my packinghouse, and the care given my trees, I always have some of the "left overs" planted after the season's business is closed. These experiments tell their own story.

May 17, 1910, I delivered to Richard Smith, Cedaredge, Colo., 1,100 trees, later in the summer he wrote me "We did not lose more than 10 per cent."

May 18, 1911, To Wm. Starks, Cory, Colo., 50 trees, all grew.

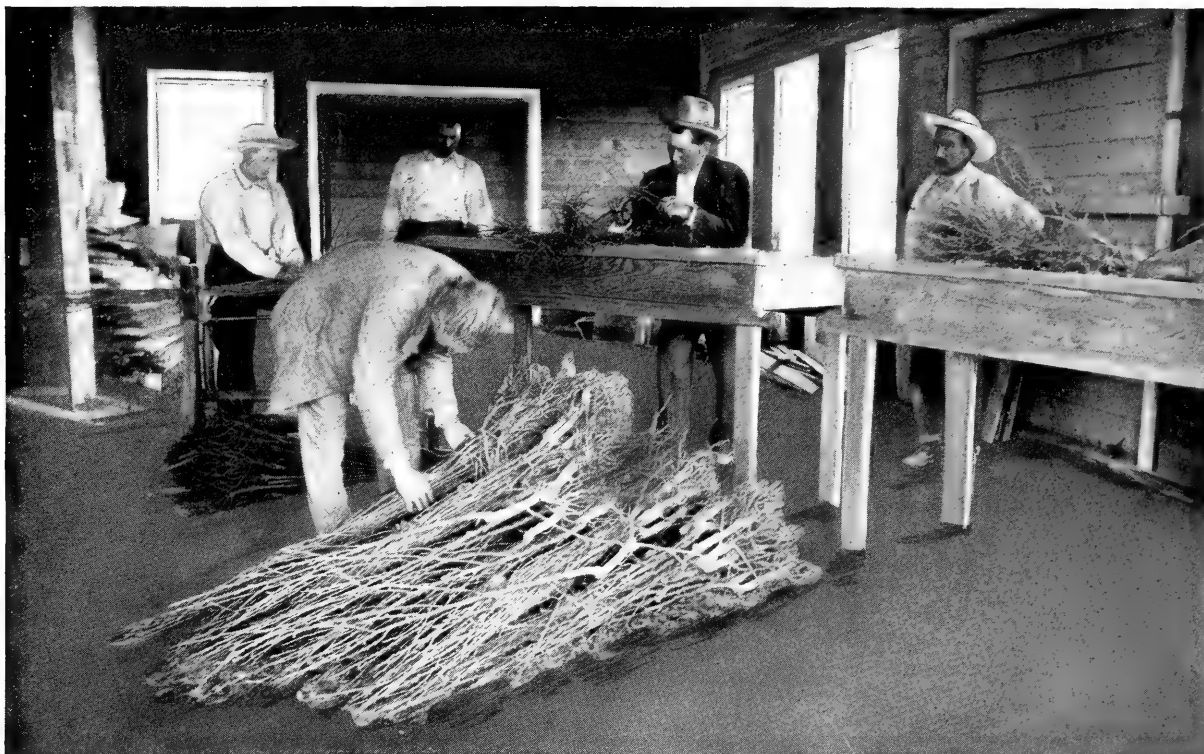
May 22, 1912, To P. H. Miller, Cedaredge, Colo., 175 trees, 161 grew.

May 19, 1912, To Robert McMullen, California Mesa, Delta, Colo., 10 trees; all grew.

May 22, 1913, To I. B. Raichart, Delta, Colo., 35 Plum trees, 27 grew.

May 28, 1913, To E. E. Bull, Austin, Colo., 64 trees; 63 grew.

Except the first lot, all were taken from the "left over" stock, simply to **Test Out the House and the Care the Trees had Received.** Note the dates, trees handled in the usual way would have been dead weeks before.



Interior of Inspection-room. Ample light. No sun; no wind; no frost; no evaporation. Trees handled this way are bound to give results.

**GEORGE D. BARNARD & COMPANY
Manufacturing Stationers**

Mr. Herbert Chase, Delta, Colorado.

St. Louis, Mo., Oct., 28, 1913.

Dear Sir:—July, 1912, the above company engraved letter heads for you, you having sent some young trees that we might get the correct shape and color effect. I had charge of the work, and planted one of those trees. It has grown so large that I am at a loss to know what to do with it. I do not know how to prune it, and take the liberty of writing you for instructions. If you will mark the drawing herewith, showing where it should be cut, I will surely appreciate it.

F. RASCHER, 3925 Sullivan Ave.

Early in the summer of 1912, I ordered letter heads from the above firm. I wanted to show a tree in its natural color, pruned ready for planting. July 1st, I selected a few trees from the "left overs," pruned them to the proper height and sent them to this firm so that they could have a live model to work from. I wanted to show the true color of bark, buds and roots. The artist who had charge of this work planted one of those trees in his yard with the result mentioned.

Read the letters from inspectors. Also refer to Page 25, showing the usual inspection of trees in depots or warehouses, exposed to wind, sun, etc.

Paonia, Colo., June 2, 1911.

If the practical orchardists of Delta County could see your packinghouse and the methods used there for inspecting and handling trees, they would never depend on trees that are obliged to stand inspection in the open air, exposed to sun and wind. I believe you have the most up-to-date plant for handling trees in Colorado.

L. T. Ernst, Horticultural Inspector for Delta County.

Grand Junction, Colo., June 13, 1911.

I have assisted in the inspection of a number of cars of trees in your house, and have always been impressed with the precautions you take to avoid drying, or other damage to the stock. Your inspection-room is so well lighted that the inspector has a chance to detect and intercept diseased trees. This fact I consider greatly to your credit, and to the advantage of your customers.

E. P. Taylor, Entomologist and Horticultural
Inspector for Mesa County.

Row by row, my trees are as clean as any grown in the world. In digging, grading and preparing for shipment, every care is used to select only vigorous, strong trees, which are submitted to the inspectors. Sometimes an inspector finds a tree in perfect

T R E E S F O R I R R I G A T E D S E C T I O N S



Showing usual inspection of trees. Photograph taken in Delta, April 3d, 1911. A thermometer placed on the brick wall in the sun registered 97°. At that time, the temperature in my house was 42°.

health, but lacking in something which the graders overlooked. I do not want such trees used and ask the inspectors to throw all such out. My trees must not only be in perfect health, but in perfect condition every way.

"It is the worst kind of folly to plant a tree that has a trace of disease; not only is the tree almost sure to die before it comes into full bearing, but the infection may be spread by the cultivator, or in the irrigation water to all parts of the orchard."
—*Fruit Growing in Arid Regions*, Page 83.

PRICES AND AGENTS

I do not depend on prices for business. My trees are not sold through agents or peddlers. They are sold for far less price than trees as good can be bought through traveling men.

My business is **Growing Trees**. I cater to the wants of intelligent men who wish to buy good trees for business purposes.

The business of agents is to sell. As a rule tree agents and tree peddlers know nothing about growing trees, as a rule they cater to the vanities, conceit, gullability and ignorance of folks who can be "persuaded" or "talked into" giving an order. Many such orders are given to get rid of the agent; many such customers do not pay for the trees, most of them would like to countermand their orders; many have to be sued for payment.

A nurseryman employing agents, pays the agent from 25% to 50% for talk, but it is the customer who finally pays, whether he knows it or not, or whether he likes it or not. If you want to buy trees from an agent, or want to become an agent, simply talk yourself into buying my trees; charge yourself 25c each for trees I sell at \$15 per hundred;

H E R B E R T C H A S E , D E L T A , C O L O R A D O

take 10c each for your agent's commission. You will then get the best trees and will receive the agents commission. I will receive 15c each net and we both will be happy.

Figure this over a little.

Don't you think you stand a better chance of getting what you want, if you run your own business, without the help of tree agents and tree peddlers?

I do not employ agents, because I am the head of this business. I know what I'm doing; keep my records so that I know whether the trouble is small-pox, a broken leg or bad spelling. A large share of my business comes from customers of ten to twenty years standing and their friends. Agents would mix me up so that I would not know whether I was afoot or horseback, and that wouldn't suit either of us.

My trees do not cost you as much as others but I receive more net money for them than anyone else selling trees in this section, because you do not pay, and I do not pay for agents' "talk".

To those who are seeking the lowest priced trees, I will state frankly, you will not find them described here. My efforts are in the direction of improvement and reliability. If you wish, I will send you the names of several parties from whom you can buy trees for a small price.

A quiet, clean, dependable business is far more satisfactory, pays greater dividends in fun and comfort, and makes more real money in the end. For these reasons, I will not employ agents.

Much of my business comes from one man telling another about my trees, thusly,

Shinnston, W. Va., Sept. 6, 1912.

"We are well pleased with the trees purchased from you last spring; in fact, more than pleased when compared with some we bought of another party.

If you can furnish the same quality for next season's planting, enter our order for 1500 as follows.

Leslie Hawker.

Last spring, Mr. Hawker ordered 1200 Apple trees from me because his uncle, Henry Hawker, Cory, Colo., told him my trees were reliable and my methods decent. They want another 1500, and come to me like this. Why? There is nothing personal in the matter; I never saw Mr. Hawker; his uncle thinks I am a decent man and he likes that sort. Leslie Hawker found my trees better than he "lowed." If he knows of friends who will plant trees, what will he tell 'em?

Fall 1911, after the fruit had been harvested, sold and paid for, one week brought these things to me:

By telephone from E. Stabler, manager of the Bank at Austin, Colo., "I want trees for 18 acres. Would like to see you." Mr. Stabler never planted trees from me, but his neighbors had. A year later, Mr. Stabler bought more trees from me and now Oct. 1st, I have received his voluntary order for trees to be planted next spring.

By telephone from a man living within 18 miles of Delta. "I want trees for 108 acres. Would like to talk it over with you." Last spring this party planted 420 trees from me.

By mail from H. W. Edbrook, Denver. "I have been so well pleased with our business that I am writing you before negotiating with anybody else. I wish trees for planting 285 acres." Mr. Edbrook planted 2200 trees from me the spring before.

By mail from Mr. Buchenau, Colorado National Bank, Denver. "Am very much pleased with the trees from you last year." He sends an additional order for 900 trees.

T R E E S F O R I R R I G A T E D S E C T I O N S

Mr. Buchenau planted 450 trees from me the spring before.

By mail from Mr. C. W. Rinehart, Cedaredge, an order for 950 trees. Last spring Mr. Rinehart planted 800 trees from me.

University of Kansas—Department of Latin.

Lawrence, Kansas, April 8, 1913.

I want to express my appreciation of the way you have handled my order. I do not see how you could have done more to insure the early receipt of the trees, or to keep me informed as to what you did. Thank you.

A. T. Walker.

Stevensville, Mont. July 13, 1912.

Our president was very much surprised to see the fine growth and shape of the 4000 (one year budded) trees received from you last spring. They have outgrown trees planted a year before.

J. M. Enschede.

Montrose, Colo., Aug. 8, 1912.

I have used Chase Nursery stock more or less, for past twenty years. Have always found it first class.

John C. Bell.

The Democrats sent Judge Bell to Congress during the time Tom Reed was speaker. Once on the floor of the House, Bell said exactly what he thought of Reed; the next day Reed sent for Bell and put him on the Appropriations Committee, perhaps the most important committee of the House. Reed believed in men who had ideas; who were unafraid and honest.

Paonia, Colo., Sept. 4, 1912

I began planting Chase trees twenty years ago. They have been of uniform good quality, in good condition thus far, always true to name. I give them preference.

E. J. Mathews.

The First National Bank, Delta, Colo., Sept. 7, 1912.

I have been planting Chase trees for past ten to twelve years and have been more than satisfied, both as to health of trees, and their being true to name.

A. H. Stockham.

Spring 1911, J. P. Fargo, Yucaipa City, California, planted 400 trees from me. Spring 1912, I received orders from the Yucaipa Valley for 3200 trees. Spring 1913, I received orders from the Yucaipa Valley for 11,500 trees, with the comment that my trees were "the best planted in the valley."

The above business is from high-class men who appreciate reliability; who pay their bills promptly and are happy. They came to me because they had faith to believe they would get reliable stock.

Aside from the satisfaction, this is real business.

For final results, for permanence in business, I rather have the influence of one such man, than of all the tree agents and tree peddlers in the U. S.

Because trees I send to distant states give satisfaction, I receive many orders from those sections, but a large part of my business comes from near home, Colorado, Utah and New Mexico.

Branch Express Office in My Packing House During the Shipping Season.
Shipments will be made correctly and promptly; no delay.

HERBERT CHASE, DELTA, COLORADO

The Following Parties Have Planted My Trees and Can Give Information
as to their Reliability, etc:

COLORADO

Austin

Aukerman, L. G.
Benner, N. J.
Brown, S. L.
Coffey, E. R.
Duncan, J. A.
Gibson, J. W.
Gilpin, F.
Gwatkin, J. E.
Hart, John
Hawkins, J. W.
Hawker, Henry
Hawker, A. B.
Hemphill, D. L.
Keiser, J.
Kettle, J. P.
Lewis, A. L.
Lord, A. H.
Macklin, R. D.
McClelland, R. S.
McFadden, H. F.
Miller, Wm.
Mundry, Chas.
Parks, Seth
Pittenger, W. T.
Ratekin, J. B.
Shelton, R. O.
Stabler, E.
Sugden, E.
Van Meter, Mrs. E. S.
Webb, B. R.
Weirick, Mrs. H.
Williamson, G. E.
Williamson, I. E.

Boulder

Wesley, P. J.

Canon City

Royal Gorge Fruit Growers'
Ass'n.
Rockfellow, B. F.

Cedaredge

Aegerter, E. C.
Blanchard, C. S.
Bertram, B. L.
Bowerman J. C.
Buol, M. P.
Cedaredge Orchard Company
Childs, Frank.
Curtis, R. W.
Curtis, C. L.
Dillion, C. H.
Dingman, W. W.
Dix, Alex.
Dolph, L. E.
Davis, J. H.
Gibbs, Dr. H. K.
Gest, Addison
Getty, H. C.
Hart, Parker
Hartford, I. T.
Heron, David
James, Robert
Johnson, A. S.
Johnson, H. P.

COLORADO

Cedaredge

Kirker, D. C.
Lee, W. H.
Lovette, Sam
Lovoto Brothers
Mills, H. H.
Morse, O. P.
Morse, Frank
Motto, P.
Parsons, Mort.
Sands, T. R.
Schooley & Koch
Smith, Richard.
Stephens, Phil. K.
Stewart, F. J.
Terrill, Rev. O. J.
Thompson, Thos.

Colorado Springs

Aylard, C.

Cortez

Minter, C. S.

Cory

Brunner, H. H.
Dixon, Guy
Gwynn, G. M.
Hart, W. S.
Hubbard, E. F.
Jennings, H. C.
Kennicott, Wm.
Pheonix, Mark
Smith, Ottis
Starr, M.
Starks, Wm.
Thomas, A. C.
Watson, E. P.
White, E. E.
Young, John.

Crawford

Ayers, A. J.
Couch, E. N.
Davis, Frank
Morrow, Alex
Revell, C. F.

Delta

Adams, W. A.
Alpenfels, J. H.
Beardsley, T. L.
Baird, Leonard
Burgin, Dr. C. H.
Christie, Frank
Condit, Prof. P. M.
Conklin & Son, I. M.
Conroy, Steve
Cook, W. G.
Croisant, E. F.
Commings, J. W.
Dale, H. R.
Darling, Herman
Dixon, J. J.
Doyle, W. A.
Duling, W. N.
Eifert, Clarence
Fairlamb, Millard
Freyberg, C.

COLORADO

Delta

Harding, Chester.
Hatcher, E. J.
Hazlette, T. A.
Hillman, W. G.
Jeffers, Welland
Keen, M. F.
Kelso, R. S.
Ladd, E. E.
Lake, Jr., H. F.
Lamb, T. E.
Lippert, C. J.
Maston, N. P.
McHugh, J. L.
McGraw, Joe
McConnell, F. W.
Moeller, C. A.
Moorhead, Austin
Obert, W. E.
Peck, F. H.
Ploger, J. H.
Pratt, H. W.
Raber, R. C.
Remmington, A. C.
Smith, B. P.
Sweitzer, L. W.
Stockham Bros.
Swim, W. S.
Welch, M. R.
Wigram, L. R.
Wilkinson, Edgar
Williams, F. G.
Wilson, Earl
Wright, S. M.

Denver

Buchenau, H. D.
Colo. National Bank.
Bonfils, T. L.
County Clerk
Curtis, L. B.
710 Kittrege Bldg.
Edbrooks, H. W. J.
F. R. Edbrooks Architect
Co.
Kelley, Dr. H. P.
Tabor Opera House Bldg.
Roberts, S. E.
Gas & Electric Bldg.
Pugh, C. H. Box 564.

Dolores,

Carpenter, N. E.
Mattison, G. E.

Eckert

Bawle, C. A.
Kennicott, H. E.
Kimball, F. E.
Lanning, C. W.
Pelazini, Mr.
Pittman, John
Reynolds, A. L.
Simpson, C. L.
Taylor, J. W.

Grand Junction

Thorpe & Barnhart

T R E E S F O R I R R I G A T E D S E C T I O N S

COLORADO

Grand Junction

Grand Junction Fruit Grow-
ers' Ass'n.
Orr, R. A.
Moore, J. F.

Hotchkiss

Baker, T. J.
Bennett, M. W.
Blaine, H. H.
Brinton, C. A.
Chaffee, A. F.
Coburn, W. S.
Durkin, J. J.
Ewing, S. G.
Gould E. S.
Helgeson, H. T.
Kellogg, W. E.
Mead Brothers
Meek, M. G.
McPike, F. W.
Mitchell, Edwin
Roberts, R. G.
Vail, H. L.
Wilmott, Ross
Wilson, Paul.

Montrose

Ashenfelder, John (estate of)
Bell, J. C.
Nye, S. H.
Widmann, E. G.
Wilson & Kyle

Olathe

Casley, J. J.
Fahrney, E. T.
Price, H. J.
Peterson, H. T.
Westesen, Carl
Traver, F. N.

Paonia

Alderson, E. P.
Anderson, U. O.
Annay, John
Ballard, E. M.
Barnes, Mr.
Beezley, D. L.
Beezley, Jim
Campbell, Albert
Carter, John
Chapin, C. H.
Cowgill, L. M.

COLORADO

Paonia

Cayle, R. F.
Grews, L. T.
Bingle, G. P.
Dorrance, W. F.
Ernst, L. T.
Friberg, Nels.
Goess, A. L.
Hager, F. C.
Henn, S. C.
Johnson, C. O.
Kennedy, H. C.
Kellogg, A. S.
Lambertson, F. E.
Lantz, J. P.
Lewis, S. E.
Lindsay, C. A.
Lull, Mr.
Lund, Mr.
Major, A. H.
Mathews, E. J.
McQuatt, Frank
Moulton, Judge
North Fork Fruit Growers'
Ass'n.
O'Bannon, F. W.
Olinger, G. S.
Parker, W. H.
Parker, A. W.
Reynolds, Geo.
Rittenhouse & Drake
Roberts, A. L.
Rovaart, J. A.
Rudolph, Jake
Schoneman, E.
Smith, Jim
Starbuck, R. D.
Stolley, L. D.
Stout, C. J.
Sutherland, N. M.
Taylor, Argo
Underwood, J. M.
Van Deren Brothers
Vogel, John
Wade, S. A.
Walton, J. B.
Wernant, S. S.
Williams, J. S.
Wiltrout, F. L.
Yates, W. H.

Pueblo

Bergerman, Ben
Fist, Ed.
White & Davis

COLORADO

Sneffels

Platt, E. H.

CALIFORNIA

Lakeport

Campbell, C. C.

Yucaipa

Fargo, J. P.

IDAHO

Nampa

Stephens, E. F.

IOWA

Des Moines

Kauffman, R. D.

NEW MEXICO

Expanola

Holterman, John W.
Hollard, Henry L.

Shiprock

Baker, R. S.

Farmington

Farmington Fruit Growers'
Ass'n.

MINNESOTA.

Minneapolis

Hall, W. L.
716 Andrus Bldg.

St. Paul

Ferguson, E. M.
Pioneer Press Bldg.

UTAH

Boulder

Shuffield, S. G.

Provo

Curtis, R. P.

Salina

Sevier Valley Merchantile
Company

Green River

Denne, A. E.

Elberta

Filson, W. N.
Whitney, N. B.

TERMS. Orders are not accepted unless the purchaser is commercially responsible.

CAUTION. Orders are accepted upon condition that they shall be void, should injury befall the stock from frost, hail, storm, fire, strikes, or other causes beyond my control.

GUARANTEE OF GENUINENESS. I exercise the greatest care to keep varieties pure and true to name, and hold myself in readiness at all times to replace, on proper proof, all stock that may prove otherwise, or refund the amount paid; but it is mutually agreed between the purchaser and myself that I shall not be liable for any amount greater than the original purchase price.

GUARANTEE OF LIFE. Every spring, many trees are planted to die; they are planted in a lazy, ignorant, careless way. It has always been so, and will continue. For these reasons, I do not guarantee the life of trees. No responsible nurseryman does. That would interfere with the business of a higher Power. Planting a tree, is a reverent, serious matter; earnest, honest effort is needed to obtain the best results.

I have an equipment for caring for trees in the best way; I know my business: results show my trees are good. I guarantee to deliver trees to you in perfect condition and then my responsibility ceases.

Catalogue of Varieties

In the irrigated sections, brilliant sunshine and cool nights give to all fruits a deeper color. Red apples become darker; dark red apples become almost black. Most folks buy apples with their eyes and they love 'em red.

"High color usually indicates high quality for the variety, no matter where the fruit is grown."—*Fruit Growing in Arid Regions, Page 228.*

APPLES

	Price		
Less than 10 of a variety, each 20c.	Per 10	Per 100	Per 1000
	\$1.50	\$15.00	\$150.00

In commercial orchards, it is advisable to plant two or three sorts on account of cross-pollination, but it is a mistake to plant more than three sorts unless you are planting more than 100 acres. Do not plant novelties and untried sorts except in an experimental way. Stick to what you know are money-makers.

Varieties are listed in their order of ripening or picking.

EARLY APPLES

Early Harvest. One of the earliest; medium to large; pale yellow; a standard, well-known sort; valuable for home use and nearby market.

Yellow Transparent. Pale yellow when fully ripe; tender; good size; valuable for home use and nearby market.

Red June. Brilliant red; very handsome in irrigated sections; ready for market when red apples are scarce; will stand transportation of 100 miles, but should not be shipped further; sells for fancy prices when packed in half-boxes.

Duchess (Duchess of Oldenburg). Valuable for home use and for markets within the nearby states.

Red Astrachan. Because it cracks badly in the irrigated sections, it is not of value. I do not propagate it.

Chenango (Chenango Strawberry). Pale yellow with brilliant red stripes and slight blue bloom; very handsome; fine quality, tender; valuable for home use and nearby market.

Wealthy. Late Fall; ready for market just before picking the main peach crop; positively the best of its season; large, almost overspread with brilliant red; very attractive; fine quality. The tree bears early and is profitable as a filler. The season of picking does not interfere with picking other fruit.

MAIN CROP

Listed in the order of picking.

Jonathan. A sort Colorado has made a reputation on; brilliant red, overspread with a blue bloom; of highest quality; an early bearer; one of the most profitable sorts.

My Jonathan are propagated from buds taken from blue ribbon trees in the orchard of Mr. William Ingham, Grand Junction, Colorado.

Grimes. (Grimes Golden). Medium size; rich golden yellow, and in the irrigated sections takes on a blush cheek; of the highest quality; invariably sells for the high prices; rapidly growing in favor.

Banana. (Winter Banana). Large; pale yellow with blush cheek; waxy; very handsome; tender and bruises easily; requires careful handling; do not regard it as profitable to grow in a large way.

Ben Davis. I do not grow it, because it is not in demand. Its color is poor. Gano is of the same family; same habits, same quality, but a handsomer and more profitable apple. Gano takes the place of Ben Davis. Ben Davis is obsolete.

T R E E S F O R I R R I G A T E D S E C T I O N S

Gano (Black Ben.) One of the best keepers and most profitable sorts; of the Ben Davis family; same in thrift, hardiness and productiveness; fruit no better in quality, but much handsomer, taking on a dark red; will sell for 25% to 50% more than Ben Davis and produces as much fruit.

Gano and Black Ben are sold where handsome apples are wanted. For these reasons, Gano and Black Ben are more profitable than Ben Davis.

Black Ben. Of the Ben Davis family. Many authorities say Black Ben and Gano are identical. Others say they are not. I grow the two as separate varieties, having obtained my Black Ben buds from marked trees (which produced blue ribbon fruit for the past three years), growing in the orchard of Mr. E. E. Bull, Austin, Colorado.

Delicious. Introduced by Stark Brothers, Louisiana, Missouri.

North Western Greening. Greenish yellow; large to very large; extremely hardy and much used as a stock for other sorts.

Rome (Rome Beauty.) One of the red apples Colorado made its reputation on; one of the most profitable. Dining-car folks want them for "baked apples and cream, 25c," (they are worth it.) In irrigated sections, Rome takes on a brilliant red and a blue bloom; one of the longest keepers and surest bearers.

My Rome are propagated from buds taken from blue ribbon trees in orchards of Mr. W. P. Heddles, Paonia.

A. L. Roberts, Paonia, Colorado, (one of the most successful fruit growers in the state) says, "Rome bears early; it is perhaps the most profitable for the first 8 or 10 years. The culls even find a market when there is any demand for cheap apples. My trees 12 to 16 years old average 16 to 20 boxes. I saw a large Rome tree at Mr. Hinman's place that produced more than 50 boxes. Often they bear a box the fourth year, but for a whole orchard it is safer to say they will average a box at 5 to 6 years."

White Winter Pearmain. One of the longest keepers; of the best quality; pale yellow, but in the irrigated sections takes on a blush cheek.

Arkansas Black. Dark red, almost black; one of the best keepers. The fruit is in great demand for Eastern and European markets, but it is not a regular bearer, and for that reason is not regarded a profitable sort.

Paragon. A seedling of the Wine Sap which it resembles, but is much larger. My Paragon are propagated from a tree growing in the orchard of Mr. M. P. Gonner, Paonia, which is a distinctive strain, the fruit averaging larger, and tree a regular bearer.

Staymen (Staymen Wine Sap.) Much larger than Wine Sap. In the irrigated sections it takes on a deep red; sells for a fancy price and is one of the valuable sorts. Where there is less sunshine it is a green apple covered with red stripes, not handsome, nor as desirable. My Staymen are propagated from buds obtained in the orchard of Rittenhouse & Drake, Paonia. The Staymen from this orchard have taken the blue ribbon wherever they have been exhibited for the past three years.

Winesap. Medium to small unless thinned. When carefully thinned the fruit attains good size. Dark red; one of the sorts Colorado has made its reputation on; a good shipper and good keeper; stands rough handling; requires a deep, heavy soil, and will not succeed on some soils suited to other sorts.

My Winesap are propagated from buds taken from blue ribbon trees in the orchard of Mr. William Ingram, Grand Junction.

Geniton (Rawles Janet). This variety buds and blooms much later than other varieties, thus escaping danger of injury from late spring frosts; it is an abundant bearer and a fairly good apple, but not high in quality and not widely planted in the irrigated regions.

Northern Spy. Not valuable in this section as an orchard tree, but very valuable as a stock on which to top-work other sorts. I propagate this sort by grafting, because a grafted Northern Spy makes a more desirable stock.

CRAB APPLES

Hyslop. Fruit large for its class; produced in clusters; dark, rich red covered with a thick blue bloom.

Transcendent. Golden yellow with beautiful rich crimson nearly covering the fruit.

APRICOTS

Price

Less than 10 of a variety, each 25c.	Per 10 \$2.00	Per 100 \$20.00
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Moorpark. The most valuable variety for the inter-mountain regions; of the best quality; deep yellow with red cheek; large size.

Wilson. A local variety of the Moorpark strain; 4 to 6 days earlier than Moorpark; larger size; otherwise identical.

CHERRIES

Price

Less than 10 of a variety, each 30c.	Per 10 \$2.50	Per 100 \$25.00	Per 1000 \$250.00
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Easiest standard fruit to grow. There are two distinct classes.

HEARTS, OR BIGARREAUS

(See cut No. 14)

Large-growing trees, with large leaves and large fruits; often called "Oxheart" and "Sweet" cherries. These are valuable for dessert use. There is much complaint about securing a good stand of this class of cherry trees. Three factors enter into the difficulty: trees not being dormant at planting; trees are given too much water; trees are deficient in roots. As a rule, failures can be traced to one of these causes. I bud this class on Mazzard stocks, which are more difficult to bud, and cost more, but they are the natural stock for this tree, have more fibrous roots, are safer, are best. The fruit of all sweet cherries is large in size, often measuring over an inch in thickness.

Black Tartarian. An old standard sort, one of the earliest sweets, deep purplish black.

Bing. Ripens after Black Tartarian, one of the grandest black cherries in existence, a fine, firm shipper, much grown on the Pacific coast for Eastern markets.

Lambert. Ripens about with Bing, extra large in size, dark purple, turning almost black when ripe, fine and firm; in quality equal to Bing.

Royal Ann. Of the largest size; pale yellow, becoming amber in the shade, with bright red cheek; about a week later than Lambert.

DUKES, OR MORELLOS

(See cut No. 15)

Smaller-growing trees, with smaller leaves and smaller fruits; called "Sour" cherries. More valuable than the others for culinary purposes. Enormous bearers; more easily transplanted.

Early Richmond. One of the first cherries to ripen; poor quality; small; bright red. Earliness is about its only value.

Montmorency. Main crop, 10 days later than Early Richmond. The most valuable commercial cherry. The fruit is large and of fine quality; acid.

This is the cherry wanted by the great packers of the country.

Much confusion exists about the "different types" of Montmorency. In 1910, I investigated this matter for the Department of Agriculture, Washington. I found various handles added to the name Montmorency, for the purpose of attracting buyers, but that the best type was brought from France to this country by Ellwanger & Barry of Rochester, N. Y. about twenty-nine years ago.

The stock I propagate is from one of the original Ellwanger & Barry trees. I know I have it right.

The demand for Montmorency Cherries is greater than the supply.

Past few seasons the country has been scoured for Montmorency Cherries. Last summer I met a cherry buyer in this county, who told me the Montmorency Cherries grown in the irrigated sections were of better quality, and preferred by the packers, to the fruit grown in the East. This party secured 100,000 pounds of cherries in this County. The fruit was packed in sugar in barrels and shipped East. He made a tour of the cherry

T R E E S F O R I R R I G A T E D S E C T I O N S

growing districts as far as the Pacific coast, hunting for Montmorency fruit. Then he went East of the Missouri river and still could not secure all he wanted.

On August 30th, I received a letter from Curtis Bros. Company, the great preservers and packers of Rochester, N. Y., which reads, "The best sour cherry for our use in packing fancy goods, is the Montmorency."

Wragg. Of the English Morello type but more valuable in the irrigated sections; large; nearly black; an enormous bearer, ripens fourteen to twenty-one days later than Montmorency.

Royal Duke. A cross between the two types, and does remarkably well in this section. By some growers in Colorado it is regarded as their most valuable cherry. Not as large as the sweet sorts, but larger than most of the others; light red, rich and juicy.

PEACHES

	Price		
Less than 10 of a variety, each 15c.	Per 10	Per 100	Per 1000
	\$1.25	\$12.50	\$125.00

Varieties are listed in their order of ripening.

Greensboro. Ripens just ahead of Arp Beauty; white with red cheek; semi-cling to free; unusual good quality for an early peach; good shipper.

Arp Beauty. Most valuable early Peach; free stone; rich yellow; crimson cheek; showy; good quality. The Delaware State College Farm reports under date of March 11, 1912, "present winter has been unusually severe on peach buds. Examination of buds of all varieties growing here, shows Arp Beauty as having suffered the least, having 86% of living buds."

Triumph. About the same season as Arp Beauty; yellow; semi-cling to free; fair to good in quality; a royal early peach in the irrigated section.

Carmen. About 12 days later than Arp Beauty; free stone; white flesh; good quality; good shipper.

Champion. About 3 weeks later than Carmen; free stone; white flesh with blush cheek; of the very best quality.

Belle of Georgia. Follows Champion 3 to 6 days; white; free stone; fine quality and a good shipper. Judge Bell, of Montrose, says, "Belle of Georgia is the best peach of its season."

Elberta. Follows Belle of Georgia 6 to 9 days; free stone. This variety planted in a large way, produces most of the peaches shipped to distant markets; yellow with crimson cheek; the best shipping peach, and probably the most valuable peach in the world.

PEARS

	Price		
Less than 10 of a variety, each 30c.	Per 10	Per 100	Per 1000
	\$2.50	\$25.00	\$250.00

Bartlett. Probably the most valuable pear grown; largely planted for market.

Beurre d' Anjou. Late fall or early winter; very profitable where it succeeds.

Kieffer. Tree a strong, vigorous grower; foliage not as subject to disease as other sorts, which makes it easy to grow. An enormous bearer of large, handsome fruit of poor quality. In irrigated sections the fruit colors well and finds a market at good prices. It is one of the most profitable pears, perhaps the most profitable.

Following figures are from the records of the Grand Junction Fruit Growers' Association, Grand Junction, Colorado.

1907, 11 cars of Kieffer sold for \$10,087.12 net to the grower. Fancy 4 tier, \$2.09 per box. Choice, 4 and 5 tier, \$1.46 per box.

1909, average price realized for 4 and 5 tier, \$1.67 per box.

1910, average price realized for 4 and 5 tier, \$1.47 per box.

Remember, Kieffer is a heavy bearer. These figures show there is money in Kieffer.
Seckel. Finest quality; small; valuable for home use or nearby markets.

PLUMS

For nearby market or home use.

	Price	
	Per 10	Per 100
Less than 10 of a variety, each 35c.	\$3.00	\$25.00
Burbank. Large; cherry red with slight lilac bloom; flesh deep yellow; an early bearer.		
Green Gage. Small; yellowish green; of the very finest quality; one of the richest and best plums.		
Italian Prune (Fellemburg). Dark purple with a blue bloom; medium size; pointed; a valuable sort for the inter-mountain region.		
Satsuma (Blood Plum). Large; skin and flesh are dark purplish red; seed exceedingly small; of good quality and fine flavor; one of the best for the inter-mountain region.		
Shropshire Damson. An improvement on the common Damson; larger than common Damson; dark purple; an enormous bearer; highly esteemed for preserving.		

QUINCES

Price	
Less than 10 of a variety each 30c.	Per 10, \$2.50.
Champion	Orange

BERRY PLANTS, CURRANTS, GRAPES

All berry plants I sell are sucker or tip plants which have been transplanted to the nursery and grown 1 year. They are thoroughly mature to the tips; have fine roots, and as a rule, give entire satisfaction. Most berry plants sold are the sucker or tip plants that have not been transplanted; they are not well rooted, and as a rule, do not give satisfaction.

In the intermountain sections, berries are grown for nearby markets or for home use, and I sell only the varieties best suited to these sections.

BLACKBERRY. Strong, transplanted plants. **Eldorado.** Large, jet-black, without hard core; melting, sweet, plant hardy and productive. Per 100, \$4.50.

DEWBERRY. Transplanted plants. **Lucretia.** A low-trailing Blackberry. Large, soft, sweet, good quality, no hard cores. Per 100, \$4.00.

RASPBERRY. Black Diamond. Transplanted plants. Hardy and healthy. Similar to Gregg, but more prolific, more profitable, a strong grower. Where known, it is considered the best Black Raspberry. Per 100, \$5.00. Black Raspberries are hardier than Red Raspberries.

Red, Marlboro. A standard well-known sort. Light crimson, firm, good, vigorous, productive. Per 100, \$4.00. Red Raspberries are of finer quality than Black Raspberries; the plants are not so hardy, but they do well in the sheltered parts of this section.

STRAWBERRY PLANTS. I do not sell these, because when handled with wooded plants they are apt to dry out or mold, and will not give satisfaction. Buy Strawberry plants from Strawberry-plant men. I will give you their address if you wish.

COLUMBUS GOOSEBERRY. A strong, robust grower; foliage large and glossy; in the intermountain sections it is freer from mildew than any other sort; fruit large and of the highest quality.

Ogden, Utah.

"The Columbus Gooseberry is the top-notch here, bringing good prices and giving no trouble from mildew."
W. J. Manning.

T R E E S F O R I R R I G A T E D S E C T I O N S

CURRENT. Fay's Prolific. Red; large berry; juicy; fine flavor. The best red currant for this section. Per 100, \$6.00. Black Currants are of little value here; do not sell.

GRAPE. Agawam. Red, early, fine quality, good keeper. Per 100, \$7.50.

Concord. Black, early, strong grower, hardy, healthy and productive. Decidedly the most popular grape in America. Per 100, \$5.00.

Niagara. White, early, vigorous and productive. Per 100, \$7.50.

SHADE TREES

American White Elm, 50c. Perhaps the grandest tree growing in America. The first two years it does not grow as rapidly as the others, but after becoming established is a strong growing tree. It becomes a tall, wide-spreading tree 75 to 125 feet high; symmetrical, vase-shaped. It needs more care in planting than the others.

Silver Leaf or Soft Maple, 50c. A rapid growing Maple, that does well in this section; easy to transplant.

Carolina Poplar, 25c. Easiest shade tree to grow, hardest to kill; will stand more trouble, discussion and neglect than any other shade tree grown here; more widely planted here than all other shade trees combined, and considering all things, perhaps the most satisfactory shade tree for the Rocky Mountain section: it has good foliage and grows rapidly, but in sections where they take pride in growing fine trees, it is regarded the poorest of all.

Do not rub leaves or small branches off the trunk the first year. Let the tree have their help, they can be cut off the next season.

At all times I shall be glad to answer questions, or give information. I should like to have an opportunity to supply your wants in trees and plants.

HERBERT CHASE, Delta, Colorado.

My offer of ten trees (see reverse of order blank) is good whether you order my trees or not. I want you to get acquainted with mine. . . .

COST OF POSTAGE

In some instances these figures may be a few cents high. In all such cases I will return excess postage.

	Long-handled Pruner			Pruning Shears			Thinning Shears			Pruning Saw			Thermometer			Grafting Wax Per Lb.		
	For 1	For 2	For 4	For 1	For 2	For 4	For 1	For 2	For 4	For 1	For 2	For 4	For 1	For 2	For 4	For 1	For 2	For 4
Local Zone— R. F. D. from Delta	\$0.08	\$0.10	\$0.14	\$0.05	\$0.07	\$0.09	\$0.04	\$0.05	\$0.06	\$0.07	\$0.08	\$0.09	\$0.05	\$0.06	\$0.06	\$0.05	\$0.06	\$0.07
Zones 1 and 2 Colorado (Western) New Mexico (North Western) Utah (East of Helper)	.09	.14	.20	.06	.08	.10	.04	.05	.07	.08	.10	.12	.05	.07	.07	.05	.08	.10
Zone 3— Colorado (Eastern) New Mexico Utah (Western) Wyoming (Southern)	.22	.37	.70	.12	.17	.27	.04	.07	.12	.12	.17	.27	.07	.12	.12	.07	.12	.22
Zone 4— Arizona Idaho Kansas Montana Nebraska Nevada Wyoming (Northern)	.26	.44	.84	.14	.20	.32	.04	.08	.14	.14	.20	.32	.08	.14	.14	.08	.14	.26
Zone 5— California Iowa Minnesota Missouri Oklahoma Oregon Washington Texas	.30	.51	.96	.16	.23	.37	.04	.09	.16	.16	.23	.37	.09	.16	.16	.09	.16	.23

What Has This To Do With Tree Planting?

I bought a well-known, reliable, high-grade automobile without riding in it or testing it, with the understanding I should be instructed as to its lubrication and operation.

I got a suit of overalls, shed my good clothes and was ready for instructions.

I opened the book of directions at the lubricating chart and started in. That chart shows forty-three places. Everything went well until we got down to place No. 8. The man could not find that place. He could not find place No. 14; I went to the office for someone else. The second man could not find place No. 14: I sent for another. The third man says, "Why, we know how to grease these cars. Pay no attention to that book. We'll show you". I held up both hands and said, "No, the man who wrote that book earns more money than the combined salaries of all of us, including every man in your place. We will go by the book". Soon everyone there came. There was not a man among 'em who knew. I insisted that we go by the book. The boss said, "We have one man here who worked in the factory four years. He's out with a buyer now. When he comes he can find that place." We waited for him; he knew.

What information of value is there here for a tree planter?

Write your answer on these blank lines

and send me the names and addresses of 8 or 10 people not on my list who are interested in tree planting, in irrigated sections, and I will send you free 10 of my best Apple trees.

Names and addresses of people who are interested in tree planting.

STATE

What variety of Apple trees do you want?

Select three sorts, First, Second and Third choice, in case my stock of some varieties may be exhausted.

Your name.

Your postoffice

Your express office.

Herbert Chase, *Nurseryman*
Delta, Colorado

When do you want your stock shipped?.....

[illegible]

Read Offer of ten Apple trees, free, on other side of this sheet.



PROPERLY STARTED IRRIGATED ORCHARD

DO NOT REMOVE A LEAF
THE FIRST SUMMER

SEE DIRECTIONS
PAGES 4 and 5
CUTS 6 and 7